



ILLINOIS DEPARTMENT OF
PUBLIC HEALTH

A Healthier Today For A Better Tomorrow

John R. Lumpkin, M.D., Director

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SF Tech
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March 1, 1994



Environmental Toxicology Case # 401018801H

Mr. Paul E. Takács, Project Manager
IEPA, Federal Sites Management Unit
Division of Remediation Management
Bureau of Land
2200 Churchill Road
Springfield, Illinois 62794-9276

Dear Paul:

Pursuant to our February 24, 1994 telephone conversation, I have enclosed a copy of the Sauget Sites - Area 2 background section. Please review and comment on this section of the Public Health Assessment for the Area 2 sites. Return the comments to me at the Edwardsville Office. I appreciate your review of this section prior to the draft release of document.

Sincerely,

Dave

David R. Webb
Environmental Toxicologist

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Enclosure

cc Division of Environmental Health
Edwardsville Regional Office

ORIGINAL

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BACKGROUND

Area 2 of the Sauget Sites consists of sites Q, R, O, and P. An additional site, located southwest of the old sludge lagoons, may also be included with the area 2 sites. This additional site is located on property owned by the Village of Sauget. A National Priorities List (NPL) scoring package is being currently being compiled by the IEPA for the area 2 sites. Additional soil samples are scheduled to be taken from sites O, P, and Q on March 16 and 17, 1994 by the IEPA.

Site O

Site O is located on Mobile Avenue in Sauget and covers approximately 45 acres. Figure 3 is a site features map of the area 2 sites, including Site O. The site is located just south of the Sauget Waste Water Treatment Plant and has four inactive sludge dewatering lagoons. These former sludge lagoons cover approximately 20 acres and have been capped with clay and vegetated with no waste evident on the surface. The site has chain-link fencing surrounding most of it, but vehicles are not restricted on the access road.

The history of Site O includes activities at the Sauget Waste Water Treatment Plant. The Sauget Treatment Plant began operation in approximately 1952. The plant treats waste from area industries and the residents of Sauget. Approximately ten million gallons per day of waste water is treated at the facility. More than 95 percent of the waste water is from the area industries. Among the area industries which contribute waste water to the plant include Monsanto Chemical, Cerro Copper, Sterling Steel Foundry, Amax Zinc, Rogers Cartage, Edwin Cooper, and Midwest Rubber. Effluent from the plant is discharged to the Mississippi River and permitted to do so under a National Pollutant Discharge Elimination System (NPDES) permit.

The treatment plant has had many past violations of the NPDES permit. These violations are primarily due to the chemical quality of the plant effluent. Mercury, PCBs, and organic solvents have been detected at levels which violate the set permit limits on several occasions. A 1982 USEPA study concluded that the effluent from the waste water treatment plant contributed a substantial volume of priority, toxic pollutants annually to the Mississippi River.

A chronology of Site O activities are listed below.

Circa 1952

Sauget Water Treatment Plant has been in operation in some form.

1965 to approximately 1978

The former lagoons were used for disposal of clarified sludges.

1981

The Village of Sauget submitted a Notification of Hazardous Waste Site Form to USEPA in June. The notification stated that the lagoons were used for disposal of clarified sludges. The lagoons were designed to drain liquids from the sludge. The lagoons were not artificially lined and were excavated into the Henry Formation Sand.

Extensive construction/excavation has been done since 1981 in the area surrounding the Sauget Treatment Plant.

In March, following a long history of effluent problems, the Sauget Waste Treatment Plant submitted specifications for a pretreatment program to increase the treatment efficiency in their waste streams.

December, 1982

IEPA collected soil samples around Bliss Waste Oil tanks at Clayton Chemical. This area is near Site O. High levels of PCBs and pentachlorophenols were detected. Dioxins, especially 2,3,7,8-TCDD was suspected at the site since Russell Bliss had been connected to dioxin contaminated waste oil in the past.

January, 1983

Construction began on the New American Bottoms Regional Waste Treatment Plant, which is to replace the old WWTP.

Illinois Attorney General's office filed suit against Russell Bliss and the Clayton Chemical for an alleged water pollution hazard.

February, 1983

IEPA inspected an underground tank at Clayton Chemical. High levels of organic found.

February, 1983

IEPA and Envirodyne Engineers soil samples reveal PCB and 2,3,7,8-TCDD contamination in an area northwest of Site O at the Sauget WWTP.

April, 1983

Clean-up plan submitted for dioxin contaminated soils. USEPA and IEPA approve the plan.

June, 1983

IEPA ordered the excavation of an underground storage tank on Clayton Chemical property and owned by Russell Bliss. Tank was found to be ruptured - soil and waste samples collected by the IEPA.

August, 1983

IEPA ordered excavation of additional soil of the Bliss underground storage tank. This was done in light of results from previous IEPA samples.

May, 1984

A trench was dug in the area of the lagoons to bury a water pipe. Wastes were encountered during trenching, and the trench was covered and the water line laid above ground.

July, 1984

A hydrogeologic investigation was begun by Geraghty and Miller.

August, 1984

Excavation for the construction of a transfer sewer at Site O uncovered contaminated soils.

December, 1986

Geraghty and Miller completed their report on investigations at Site O. The report outlined the extent of ground water contamination from the former sludge lagoons.

December, 1986-March, 1987

Nine subsurface soil samples were taken at Site O. An additional two subsurface soil samples were taken in areas just off-site.

July, 1987

Two ground water monitoring wells were sampled on-site. Three monitoring wells located just off-site were sampled by E & E.

March, 1994

Surface and subsurface soil samples are expected to be taken by IEPA.

Site P

Site P covers approximately 20 acres in the northwestern part of Sauget (Figure 7). The site is an inactive, IEPA permitted landfill. Site P has steep slopes along the sides of the landfill, which are somewhat eroded. Access to the site is not restricted.

1972

Sauget and Company enter into a lease agreement with Union Electric Company of St. Louis, Missouri, to operate a waste disposal facility.

January, 1973

IEPA issues a permit to Sauget and Company to operate a landfill at Site P. The permit only allowed non-chemical waste from Monsanto.

1974

Sauget and Company applied for and were granted a supplement permit for Site P. The supplemental permit allowed the landfill to accept general waste and diatomaceous earth filter cake from Edwin Cooper (now the Ethyl Corporation). Routine IEPA inspections began at the facility.

October, 1975

An IEPA inspector observed a small amount of yellowish tar-like liquid in an area next to drums labelled "Monsanto ACL-85, Chlorine Composition". Both Monsanto and Sauget and Company were notified of the violation and the issue was then "dropped".

December, 1977

An IEPA inspection indicated the disposal of 25 barrels of phosphorus pentasulfide. Monsanto was required to remove this waste from the site.

1978-79

IEPA inspections revealed unpermitted disposal of Monsanto ACL filter residues and packaging.

December, 1981

IEPA issued a supplemental permit to Sauget and Company after a water line was discovered in the middle of the southern portion of the site.

February, 1987

Four subsurface soil samples were taken at 5 locations on-site. Two of the four samples were composites of four borings at two different depth ranges of 0-10 and 25-35 feet.

March, 1994

Surface and subsurface soil samples are expected to be taken by IEPA.

Site Q

Site Q is an inactive waste disposal facility in Sauget and Cahokia (Figure 3). The facility which was operated by Sauget and Company between 1966 and 1973, covers approximately 90 acres. The site is located on the east bank of the Mississippi River and is on the river side of the flood control levee.

- Most of Site Q is occupied by the Pillsbury Company, which operates a coal and grain unloading and transfer facility. The northern half of the site contains coal and cinders while the

southern portion is unoccupied. A railroad spur divides the site and several ponds exist on-site. Vehicular traffic has restricted access due to chain-link fencing in the north and a 24 hour guard at the gate. Pedestrian access is unrestricted in the southern portion of the Site.

Site Q was operated without an IEPA permit. The north site was registered with the Illinois Department of Public Health in 1967, prior to the formation of IEPA. The site is presently covered with black cinders, which makes it highly permeable. Site Q is presently being leased to the Pillsbury Company by its owners the Riverport Terminal and Fleeting Company.

A brief chronological history is given below.

1966

Disposal operations began in the northern most portion of Site Q. A flyash pond operated by Union Electric existed at the area immediately south of the Monsanto Chemical dump.

1968-1972

Septic tank pumping and general municipal refuse were also accepted at the site.

Early 1970s

IEPA inspections documented several violations of the Illinois Environmental Protection Act, including open burring, using unsuitable cover materials (cinders and flyash), and disposal of liquid chemical wastes.

April, 1971

IEPA filed a complaint against Sauget and Company. The company was ordered to cease open burring, using flyash and cinders for cover materials, and accepting liquid chemical wastes.

May, 1971

The Illinois Pollution Control Board issued an order to Sauget and Company to discontinue the use of cinders and flyash for final cover.

September, 1971-August, 1971

IEPA conducted monthly inspections at the site. During this time they cited inadequate daily and final cover, and the disposal of liquid wastes.

July, 1972

An IEPA inspection revealed a smoldering underground fire.

August, 1972

Leach tests of the cinder cover was performed by IEPA. The material was found to be inadequate in terms of

permeability of material and its high metal content.

October, 1972

The fire, which began in July, 1972, finally went out. The fire burnt from July to October despite repeated attempts to extinguish it.

1972

Sauget and Company apply for a permit to extend the existing landfill to an area south of the Alton and Southern Railroad. IEPA denied all permit applications to the southern site extension. Approval was never issued by IEPA, however Sauget and Company used this area for disposal.

October, 1972

IEPA collected two samples from Site Q. One was of ponded water, the other was a leachate sample. Results indicated the presence of metals including lead and mercury.

January, 1973

Ground water samples were collected in January, 1973, from two monitoring wells.

March, 1973

Mississippi River flood waters inundated Site Q. /the flood conditions lasted until May, 1973.

April, 1973

Samples of ponded water were collected by IEPA on two separate occasions.

November, 1973

The Illinois Secretary of State revoked the authority of Sauget and Company to transact business in the State of Illinois.

January, 1975

Disposal activities were complete at Site Q by this time.

September, 1976

An IEPA inspection of Site Q revealed an underground fire at the site. The fire smoldered for approximately one month.

May, 1977

The Illinois Pollution Control Board filed a Suite #77-84 against Sauget and Company and Paul Sauget. A monetary penalty was invoked and Sauget and Company was ordered to put a two foot layer of suitable cover material to cap the entire site by February, 1981.

May, 1980

IEPA was notified that drums and chemical wastes were uncovered during excavation along a railroad spur.

May, 1981

In response to Sauget's failure to comply with the Illinois Pollution Control Board's order #77-84 and alleging several violations of the Illinois Environmental Protection Act, the Illinois Attorney General filed suit against Sauget and Company.

October, 1981

IEPA sampled leachate seeps from the banks of the river. Results indicated high level of organic contaminants.

June, 1983

A subsurface investigation of Site Q was began by a USEPA FIT contractor. Over half of the organics analyzed for in the samples were detected including 2,3,7,8-TCDD in two samples.

A geophysical investigation was completed by Technos, Inc. of Miami, Florida. The investigation included flux-gate magnetometry and EM.

September, 1983

IEPA took more leachate seep samples of the bank of the Mississippi River. The results were similar to the results of the October, 1981, samples.

March, 1985

The Illinois Attorney General's Office reentered a suit against Sauget and Company. The IAGs office ordered final cover be applied at the site and also requested a civil penalty.

March, 1987

E & E took nine samples from eight monitoring wells at Site Q. Monitoring wells were also sampled in area adjacent to Site Q.

March, 1994

Surface and subsurface soil samples are expected to be taken by IEPA.

Site R

Site R is the location of the Sauget Toxic Dump (which is also known as the Krummerich Landfill). The site is owned by Monsanto Chemical Company and was used by Monsanto for landfilling between 1957 and 1977. The site is located north and west of site Q on the river side of the flood control levee (Figure 3). Site R is covered with a clay cap and is vegetated.

Drainage flows to ditches along the perimeter of the site.
Access to Site R is restricted
by a chain-link fence and monitored by television cameras.

1957

The Sauget Toxic Dump began being used by Monsanto.

August, 1968

The Illinois Department of Public Health (IDPH) sampled monitoring wells at Site R. Phenols were identified in all ground water samples.

In response to an IDPH request, Monsanto submitted a waste inventory of the materials disposed of at Site R. The inventory included 35,470 cubic yards of material.

1971

IEPA begins making route inspection at Site R.

April, 1971

IEPA inspection of Site R revealed disposal of bulk chemical wastes and drums.

May, 1971

The Illinois Pollution Control Board order number 71-29 issued to Sauget and Company to respond to a request for information.

June, 1971

Monsanto responded to the Illinois Pollution Control Board order 71-29. They indicated that 18,400 cubic yards of chemical wastes disposed of at Site R for 1971.

December, 1972

IEPA sample monitoring wells at Site R. Phenols found in all samples.

January, 1973

High concentrations of phenols were identified by IEPA in a limited analysis of samples taken from waste ponds.

February, 1973

IEPA sample monitoring wells at Site R and found high levels of phenol and chemical oxygen demand (COD) in all samples.

March, 1973

The Mississippi River flood waters inundated Sites R and Q. These conditions persisted until May.

November, 1973

The Illinois Secretary of State revoked the authority

of Sauget and Company to transact business in the State of Illinois.

1973

IEPA sent notices to Sauget and Company and Monsanto, which outlined violations of the Environmental Protection Act at Site R. The violations included inadequate segregation of wastes, and a lack of the necessary permits to operate a disposal facility. These violations were reiterated several times in 1973 and again in 1974.

1973-1976

IEPA sampled the monitoring wells at Site R annually. Also a Monsanto Raney well located in the northwest corner of the Site was sampled.

1975

Records indicate a significant reduction in the amounts of chemicals disposed on-site.

1976

Raney well sample indicated PCB contamination.

October, 1977

D'Appolonia Engineers, a consultant for Monsanto, conducted a subsurface investigation of Site R and proposed appropriate closure alternatives.

1977

Monsanto voluntarily cease operations at Site R.

May, 1978

Monsanto filed closure documents and plans with IEPA.

September, 1978

Monsanto began closure operations which consisted of covering, grading, capping, and security Site R.

October, 1979

IEPA samples from monitoring wells indicated the presence of chlorophenols, chlorobenzenes, and aniline derivatives.

October, 1979

Closure of Site R was completed.

February, 1980

Monsanto filed an Affidavit of Closure for Site R.

March, 1981

Monitoring well samples indicated the presence of a variety of organic compounds.

May, 1981

Monsanto filed a CERCLA notification for Site R.

October, 1981

The IEPA collected leachate and sediment samples from Site R. The samples were collected from an area which was adjacent to the Mississippi River. Leachate was noted to be flowing into the river in at least three locations.

October, 1981

The US Food and Drug Administration (USFDA) collected fish samples from both upstream and downstream river locations. The downstream fish contained several organic contaminants.

December, 1981

A USEPA TAT contractor sampled the Site R seeps adjacent to the river. Analyses of these samples included higher chlorinated (hexa-through octa-) dioxins.

July, 1982

The USEPA FIT contractor submitted an HRS score for Site R. The site scored 7.23 and did not qualify for the National Priorities List (NPL). This score was low because of a lack of a target population. Surface and ground water contamination was observed, however there was not a target population for these releases. No air releases were observed.

1982

The IAGs office filed suit against Monsanto outlining several apparent violations of the Illinois Environmental Protection Act. Most of the complaint was regarding water pollution and the relief being sought included civil penalties and the issuance of an injunction to Monsanto to immediately prevent seepage from Site R from entering the river. The injunction also directed the defendant to remove all waste from the site.

October, 1983

Geraghty and Miller, a contractor for Monsanto, conducted a hydrogeologic investigation on Monsanto property including Site R.

July, 1984

Monsanto applied for a permit to construct a revetment along the bank of the Mississippi River.

1985

Revetment constructed along the bank of the Mississippi River.

September, 1986

The initial Geraghty and Miller hydrogeologic investigation report estimated 77 pounds of organic compounds were leaching into the Mississippi River per day.

March, 1987

E & E took one ground water sample from an on-site location with an additional nine ground water samples taken from seven wells located in areas adjacent to the site.